

## REMARKS

In an Office Action mailed August 8, 2007, the Examiner made the following rejections:

Claims 1-2, 5, and 29-30 were rejected under 35 U.S.C. § 102(a) over U.S. Pat. No. 6,222,891 (Liu) in view of U.S. Publ. No. 2003/0199264 (Holenstien).

Claim 1 has been amended to state that the radio frequency signal is an analog radio frequency signal. In rejecting claim 1, the Examiner relies upon Liu as disclosing a mixer (18, 50) having a first input, a second input terminal coupled to an output terminal of a direct digital frequency synthesizer, and an output. However, the Office acknowledges that Liu does not disclose receiving an RF frequency signal, let alone an analog RF frequency signal, or providing an analog output signal as recited, but instead relies upon Holenstein as disclosing these elements in an obvious manner. Applicants respectfully disagree.

The Examiner has not met the initial burden of supporting a *prima facie* conclusion of obviousness in rejecting claim 1 in that the proposed combination of Liu in view of Holenstein would destroy the function of Liu. The mixer (18, 50) of Liu is a digital mixer that receives digital information and provides digital information. More specifically, Liu receives two digital numbers to generate a digital result for further processing. (See Liu column 9, lines 27-32.) Holenstein discloses an analog mixer that receives analog signals and provides an analog signal. When Liu is combined in view of Holenstein, the analog radio signal from LNA 304 of Holenstein is provided to the mixer (18, 50) of Lui. However, it is noted that the digital mixer of Liu requires a complex digital value, not an analog signal. (See Liu column 9, lines 27-34.) As a result, the mixer of Liu when combined as suggested with Holenstein cannot operate, thereby destroying its functionality. It is well recognized that a proposed modification to a prior art reference cannot render the reference unsatisfactory for its intended purpose. (See MPEP 2143.01(V.))

Even if the proposed modification did not destroy functionality, which it does, the combination would change the principle of operation of Liu in a manner not allowed. Specifically, it is recognized that a suggested combination of references cannot require a substantial reconstruction and redesign of the elements shown as well as a change in the basic

principle under which the construction was designed to operate. (See MPEP 2143.02 (VI). Clearly the digital input, such as the input of Liu that receives the analog RF signal, cannot receive an analog input without substantial reconstruction and redesign of the elements shown. Even if such changes were not substantial, which they are, the Examiner has not resolved the level of one of ordinary skill in the art to justify why a such a person would have combined an analog mixer and a digital mixer to arrive at claim 1 as required by *Graham v. John Deere Co.* (See USPTO Examination Guidelines for Determining Obviousness under 35 U.S.C. § 103 in view of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*) For at least these reasons, a *prima facie* rejection of claim 1 has not been made.

Claim 29 has been amended to recite receiving an analog radio frequency that is mixed with a digital local oscillator signal. For the reasons put forth above a *prima facie* rejection of claim 29 has not been made by the combination of Liu in view of Holenstein in that the combination would destroy functionality of the prior art references, require substantial reconstruction and redesign of the prior art elements, and that the Examiner has not resolved the level of one of ordinary skill in the art to justify such a combination, even if it did not destroy functionality and require substantial reconstruction and redesign.

For at least this reason, withdrawal of the rejections of claims 1 and 29 under 35 U.S.C. § 103(a), and of the rejections of claims 2, 5, and 30 at least by virtue of their depending from claims 1 and 29, are respectfully requested.

Claim 6 was rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of Applicant's admitted prior art (Prior Art). Claim 6 depends from claim 1. The combination of Liu and Holenstein in view of the Applicant's admitted prior art, if any, does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For at least this reason, withdrawal of the rejection of claim 6 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 3 and 31 were rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of U.S. Publ. No. 2002/0177423. Claim 3 depends from claim 1. Claim 31 depends from claim 29. The rejections of claims 3 and 31 over Liu and Holenstein in view of U.S. Publ. No. 2002/0177423 (Cowley) does not remedy the Office's failure to establish a *prima facie* showing

of obviousness as previously discussed. For example, Cowley cannot cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejections of claims 3 and 31 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 4 and 32 were rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of U.S. Pat. No. 6,177,964 (Birleson). Claim 4 depends from claim 1. Claim 32 depends from claim 29. The rejection of claims 4 and 32 over Liu and Holenstein in view of U.S. Pat. No. 6,177,964 (Birleson) does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, Birleson cannot cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejections of claims 4 and 32 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 18, 20, 38, and 40 were rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of U.S. Pat. No. 4,361,906 (Sakamoto) and further in view of U.S. Publ. No. 2005/0239499 (Oosawa). Claims 18 and 20 depend from claim 1. Claims 38 and 40 depend from claim 29. The rejection of claims 18, 20, 38 and 40 over Liu and Holenstein in view of Sakamoto and further in view of Oosawa does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, neither Sakamoto nor Oosawa can cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejections of claims 18, 20, 38 and 40 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 19 and 39 were rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of Sakamoto and further in view of Oosawa and further in view of U.S. Pat. No. 6,711,149 (Yano). Claims 19 and 39 depend from claims 1 and 29, respectively. The rejection of claims 19 and 39 over Liu and Holenstein in view of Sakamoto and further in view of Oosawa and further in view of Yano does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, neither Sakamoto, Oosawa nor Yano can cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejections of claims 19 and 39 under 35

U.S.C. § 103(a) is respectfully requested.

Claims 21, 25, and 41 were rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of Sakamoto. Claim 21 and 25 depend from claim 1. Claim 41 depends from claim 29. The rejection of claims 21, 25 and 41 over Liu and Holenstein in view of Sakamoto does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, Sakamoto cannot cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejections of claims 21, 25, and 41 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 42 was rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of Sakamoto and in further view of PCT Publ. No. WO 97/06604 (Hedstrom). Claim 42 depends from claim 29. The combination of Liu and Holenstein in view Sakamoto and Hedstrom does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For at least this reason, withdrawal of the rejection of claim 42 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 23 was rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of Hedstrom. Claim 23 depends from claim 1. The rejection of claim 21 over Liu and Holenstein in view of Hedstrom does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, Hedstrom cannot cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejections of claim 23 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 34-36 were rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of U.S. Publ. No. 2003/0083033 (Staszewski). Claims 34-36 depend from claim 29. The combination of Liu and Holenstein in view of Staszewski does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For at least this reason, withdrawal of the rejections of claims 34-36 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 13, 22, and 37 were rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of U.S. Pat. No. 5,251,218 (Stone). Claims 13 and 22 depend from claim 1. Claim 37

depends from claim 29. The rejection of claims 13 and 22 over Liu and Holenstein in view of Stone does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, Stone cannot cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejections of claims 13, 22, and 37 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 24 was rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of Hedstrom and further in view of Birleson. Claim 24 depends from claim 1. The rejection of claim 24 over Liu and Holenstein in view of Hedstrom and Birleson does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, Birleson cannot cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejection of claim 24 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 43 was rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of U.S. Publ. No. 2001/0041532 (Tomasz) and further in view of Sakamoto. Claim 43 depends from claim 29. The rejection of claim 43 over Liu and Holenstein in view of Tomasz and Sakamoto does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, neither Tomasz nor Sakamoto can cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejection of claim 43 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 44 was rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of Sakamoto and further in view of Staszewski. Claim 44 depends from claim 29. The rejection of claim 44 over Liu and Holenstein in view of Staszewski does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, Staszewski cannot cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejection of claim 44 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 7, 27, 33, and 46 were rejected under 35 U.S.C. § 103(a) over Liu and Holenstein in view of Tomasz. Claims 7 and 27 depend from claim 1. Claims 33 and 46 depend from

claim29. The rejection of claims 7, 27, 33 and 46 over Liu and Holenstein in view of Tomasz does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, Tomasz cannot cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason, withdrawal of the rejections of claims 7, 27, 33, and 46 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 28 and 46 were rejected under 35 U.S.C. § 103(a) over Liu, Holenstein, and Tomasz and further in view of admitted Prior Art. Claims 28 and 46 depend from claims 1 and 29, respectively. The rejection of claims 28 and 46 over Liu, Holenstein, and Tomasz in further view of admitted prior art, if any, does not remedy the Office's failure to establish a *prima facie* showing of obviousness as previously discussed. For example, neither Tomasz nor the prior art can cure the Office's failure to make a *prima facie* rejection of obviousness by combining Liu and Holenstein. For at least this reason the rejection of claims 28 and 46 under 35 U.S.C. § 103(a) is respectfully requested.

## CONCLUSION

Since the rejection rests on clear factual and legal errors, Applicant respectfully requests the withdrawal of the final rejection and the allowance of the present application without the need for a long and costly appeal.

The Commissioner is hereby authorized to charge any fees that may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

November 8, 2007  
Date

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